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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/592,009	LEE ET AL.	
	Examiner	Art Unit	
	TANH Q. NGUYEN	2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12/02/05* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 7-9, 11, 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Anderson et al. (US 5,613,114).

3. As per claim 1, Anderson teaches a method for performing a context switch operation, comprising:

setting an index register [current thread ID register 64, FIG. 1] on an address portion [col. 6, lines 30-32] of a state machine [60, 62, 64, 21-23, 31-33, 41-43, 51-53, FIG. 1; note that digital circuits that have memory are commonly referred to as sequential circuits or state machines (see for example, col. 1, lines 11-12 of US 5,163,016 to Har'El et al.)] in a peripheral system [20, FIG. 1] to a first index value (a first thread ID corresponding to a first thread) by a host computer [10, FIG. 1], the first index value indicating a first register [e.g. 21, 31, 41, 51 - FIG. 1] to be accessed;

in response to setting the index register to the first index value [in response to a

first thread ID being set (i.e. stored) in the current thread ID register (col. 8, lines 7-12; col. 8, lines 60-67)], accessing context data in the first register of the peripheral system based upon first index value [the current thread ID (i.e. the first thread ID) is retrieved from the current thread ID register, decoded, and used to restore context data element associated with the first thread (col. 10, lines 2-9; col. 11, lines 4-22)];

setting the index register to a second index value (a second thread ID corresponding to a second thread) by the host computer, the second index value indicating a second register [e.g. 22, 32, 42, 52 - FIG. 1] to be accessed; and

in response to setting the index register to the first index value [in response to a second thread ID being set (i.e. stored) in the current thread ID register (col. 8, lines 7-12; col. 8, lines 60-67)], accessing context data in a second register of the peripheral system based upon the second index value [the current thread ID (i.e. the second thread ID) is retrieved from the current thread ID register, decoded, and used to restore context data element associated with the second thread (col. 10, lines 2-9; col. 11, lines 4-22)], wherein the first and second registers are collocated with the peripheral system [the registers are collocated in the peripheral system 20, FIG. 1],

4. As per claim 7, Anderson teaches the registers [21-23, 31-33, 41-43, 51-53, FIG. 1] being dedicated to particular contexts - hence the first and second registers not being architected registers.

5. As per claim 8, Anderson teaches a system comprising:

a host computer [10, FIG. 1], the host computer including a microprocessor [12, FIG. 1];

a peripheral system [20, FIG. 1] coupled to the host computer, the peripheral system including a state machine [60, 62, 64, 21-23, 31-33, 41-43, 51-53, FIG. 1] including an index register [64, FIG. 1], the peripheral system further including a first register [e.g. 21, 31, 41, 51 - FIG. 1] and a second register [e.g. 22, 32, 42, 52 - FIG. 1], the first register being associated with a first index value and the second register being associated with a second index value, wherein the first and second registers are collocated with the peripheral system (see rejection of claim 1 above).

an interface [29, FIG. 1] coupled to the host computer and to the peripheral system, the interface being configured to provide first and second index values from the host computer to the peripheral system; and

a register access circuit [76, 78 - FIG. 2] in the peripheral system, the register access circuit being configured to access context data in the first register in response to the first index value being provided by the host computer and set by a thread scheduling unit [74, FIG. 2], wherein the index register is configured to store either the first index value or the second index value, the register access circuit being further configured to access context data in the second register in response to the second index value being provided by the host computer and set by the thread scheduling unit (see the rejection of claim 1 above).

6. As per claim 9, see the rejection of claim 7 above.

7. As per claims 11, 13, Anderson teaches the peripheral system including a microprocessor [60, 62 - FIG. 1]; and the peripheral system including a plurality of context registers, wherein each of the plurality of context registers is associated with

one of a plurality of index values other than the first and second index values [...23-53, FIG. 1].

8. Claims 1, 3-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Takeda (US 6,292,851).

9. As per claim 1, Takeda teaches a method for performing a context switch operation, comprising:

setting an index register [26, FIG. 1] on an address portion (register 26 is an Address register) of a state machine [6, FIG. 1; see definition of Finite state machine in Wikipedia cited previously; note also that digital circuits that have memory are commonly referred to as sequential circuits or state machines (see for example, col. 1, lines 11-12 of US 5,163,016 to Har'El et al.)] in a peripheral system [6, FIG. 1; col. 3, lines 12-22] to a first index value by a host computer [4, FIG. 1], the first index value (a first address) indicating a first register to be accessed [18 of a first LSI 17 – FIG. 1 (col. 3, lines 40-42); register in SDRAM 32 - FIG. 2 corresponding to register 18 of the first LSI 17 (col. 5, lines 50-54); col. 5, lines 44-47; col. 5, lines 50-60];

in response to setting the index register to the first index value, accessing context data in the first register of the peripheral system based upon first index value (e.g. when a first address is provided by the host computer to index register 26, and is associated with register 18 of the first LSI 17, data in SDRAM associated with register 18 of the first LSI 17, or data in register 18 of the first LSI 17 are accessed);

setting the index register to a second index value by the host computer, the second index value (a second address) indicating a second register to be accessed [18

of a second LSI 17 – FIG. 1 (col. 3, lines 40-42); register in SDRAM 32 - FIG. 2 corresponding to register 18 of the second LSI 17 (col. 5, lines 50-54); col. 5, lines 44-47; col. 5, lines 50-60]; and

in response to setting the index register to the second index value, accessing context data in a second register of the peripheral system when the index register is set to the second index value (e.g. when a second address is provided by the host computer, and is associated with register 18 of the second LSI 17, data in SDRAM associated with register 18 of the second LSI 17, or data in register 18 of the second LSI 17 are accessed), wherein the first and second registers are collocated with the peripheral system (register 18 of the first LSI 17; register 18 of the second LSI 17; and corresponding registers in SDRAM 32 are collocated on peripheral system 6).

Note that the examiner considers "context data in the first register" as data in the first register context, "context data in the second register" as data in the second register context, and "context switching operations" as operations for switching from first register context to second register context.

10. As per claims 3-6, Takeda teaches the state machine of the peripheral system including an address portion [26, FIG. 1; 36, FIG. 2], a control portion [22, 30, 34, 40 - FIG. 2], and a data portion [18, 19, 28 - FIG. 1; 32, 38 - FIG. 2]. Takeda also teaches each register being dedicated to a device (i.e. an LSI), hence teaches accessing context data comprising receiving by the peripheral system an address value that identifies an address within the register, control input identifying read/write functions (writing to register 18/SDRAM 32; reading from register 18/SDRAM 32), and data value to write

the data value to the register for a write function, or to provide the contents of the register to the host computer for a read function.

11. As per claim 7, Takeda teaches the registers not being architected registers [register 18 of the first LSI 17, register 18 of the second LSI 17, registers in SDRAM corresponding to the first LSI 17 and the second LSI 17 are dedicated to particular context - hence are not architected registers].

12. As per claim 8, Takeda teaches a system comprising:

a host computer [4, FIG. 1], the host computer including a microprocessor [12, FIG. 1];

at least one peripheral system [6, FIG. 1; col. 3, lines 12-22] coupled to the host computer, the peripheral system including a state machine [6, FIG. 1; see definition of Finite state machine in Wikipedia cited previously; note also that digital circuits that have memory are commonly referred to as sequential circuits or state machines (see for example, col. 1, lines 11-12 of US 5,163,016 to Har'El et al.)] including an index register [26, FIG. 1], the peripheral system further including a first register [18 of a first LSI 17 - FIG. 1 (col. 3, lines 40-42); register in SDRAM 32 - FIG. 2 corresponding to register 18 of the first LSI 17 (col. 5, lines 50-54] and a second register [18 of a second LSI 17 - FIG. 1 (col. 3, lines 39-42); register in SDRAM 32 - FIG. 2 corresponding to register 18 of the second LSI 17 (col. 5, lines 50-54)], the first register being associated with a first index value (a first address [[col. 5, lines 44-47; col. 5, lines 50-60]) and the second register being associated with a second index value (a second address [col. 5, lines 44-47; col. 5, lines 50-60]), wherein the first and second registers are collocated with the

peripheral system (register 18 of the first LSI 17; register 18 of the second LSI 17; and corresponding registers in SDRAM 32 are collocated on peripheral system 6);

an interface [8, FIG. 1] coupled to the host computer and to the peripheral system, the interface being configured to provide first and second index values from the host computer to the peripheral system [col. 5, lines 44-47]; and

a register access circuit [20, 22, 24, 34 - FIG. 2] in the peripheral system, the register access circuit being configured to access context data in the first register in response to the first index value being provided by the host computer (e.g. when a first address is provided by the host computer and is associated with register 18 of the first LSI 17, data in SDRAM associated with register 18 of the first LSI 17, or data in register 18 of the first LSI 17 are accessed), wherein the index register is configured to store either of the first index value or the second index value (the address register is used to store a first address associated with register 18 of the first LSI 17, or a second address associated with register 18 of the second LSI 17), the register access circuit being further configured to access context data in the second register in response to the second index value being provided by the host computer (e.g. when an address is provided by the host computer and is associated with register 18 of the second LSI 17, data in SDRAM associated with register 18 of the second LSI 17, or data in register 18 of the second LSI 17 are accessed).

13. As per claim 9, Takeda teaches the registers not being architected registers [register 18 of the first LSI 17, register 18 of the second LSI 17, registers in SDRAM corresponding to the first LSI 17 and the second LSI 17 are dedicated to particular

context - hence are not architected registers].

14. As per claim 10, Takeda teaches the peripheral system including a state machine module [6, FIG. 1] that includes an address portion [26, FIG. 1; 36, FIG. 2], a control portion [22, 30, 34, 40 - FIG. 2], and a data portion [18, 19, 28 - FIG. 1; 32, 38 - FIG. 2], the data portion including the first and second registers (see rejection of claims 1, 3-6, 8 above).

15. As per claims 11-13, Takeda teaches the peripheral system including a microprocessor [22, FIG. 1];

the address portion comprising the register access circuit [col. 5, lines 44-47];

the peripheral system including a plurality of context registers, wherein each of the plurality of context registers is associated with one of a plurality of index values other than the first and second index values [col. 3, lines 39-42].

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

17. Claims 2-6, 10, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (USP 5,613,114).

18. As per claim 2, Anderson does not teach context data including a device address for a network device, a class value, a clock offset value and an active member address. Such context data are traditionally associated with communications in a Bluetooth environment.

Anderson in essence teaches reducing or eliminating the need for traditional context save and restore when performing context switch operations - by using register sets, each of which being dedicated to a particular context [col. 4, lines 24-36]. Anderson, however, does not teach a Bluetooth environment.

Since it was known in the art at the time the invention was made that traditional context switch operations in a Bluetooth environment require substantial context save and restore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate register sets, each of which being dedicated to a particular context (as is taught by Anderson) in a Bluetooth environment - in order to reduce and/or eliminate the traditional context save and restore when performing context switch operations in such environment (hence context data in such environment including a device address for a network device, a class value, a clock offset value and

an active member address).

19. As per claims 3-6, Anderson teaches accessing context data in the second register (see rejection of claim 1 above). Since it was known in the art at the time the invention was made to use an address value to identify an address within a register, a control input to identify read/write functions, and data value to write the data value to the register for a write function, or to provide the contents of the register to the host computer for a read function to access data in a register, it would have been obvious to use an address value, a control input, and data value - as is known in the art, to access the context data in the second register.

20. As per claims 10, 12, Anderson teaches the peripheral system including a state machine module that includes an address portion, a control portion, and a data portion, the data portion including the first and second registers (see rejection of claims 1, 3-6, and 8 above); the address portion comprising the register access circuit [76, 78 - FIG. 2].

Double Patenting

21. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In *re Thorington*, 418 F.2d 528, 163 USPQ

644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

22. Claims 1-13 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 4-5 of copending Application No. 11/314,036 in view of Maupin.

As per claims 1, 8, 13, claims 1, 5 of the copending application claim all the limitations of the claims except for a context index register for setting the index values. Maupin teaches a context index register for setting a value identifying a new context in a context switch operation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a context index register, as is taught by Maupin, in order to identify a new context in a context switch operation.

As per claims 2-6, claim 5 of the copending application claims a Bluetooth network and communications in a Bluetooth network, hence the context data of claim 2, and accessing the context data of claims 3-6.

As per claims 7, 9, claim 4 of the copending application claims non-architected registers.

As per claims 10-12, claim 5 of the copending application claims a host controller, hence a state machine, a microprocessor and a register access circuit in the host controller.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Examiner's note: *Examiner has cited particular page, column and line number(s) in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. Applicant needs to consider the references in their entirety as potentially teaching all or part of the claimed invention.*

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and verification of the metes and bounds of the claimed invention.

Response to Arguments

23. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TANH Q. NGUYEN whose telephone number is (571)272-4154. The examiner can normally be reached on M-F (9:30AM-6:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TARIQ HAFIZ can be reached on (571)272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TANH Q. NGUYEN/
Primary Examiner, Art Unit 2182

TQN: October 31, 2008